

**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program**

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June 3, 2008

Contract No. 04-0120F4

04-SF-80-13.2 / 13.9

Self-Anchored Suspension Bridge

Letter No. 05.03.01-002090

Michael Flowers  
Project Executive  
American Bridge/Fluor, A JV  
375 Burma Road  
Oakland, CA 94607

Dear Michael Flowers,

**Tolerances for Orthotropic Rib Stiffeners**

As requested in the Core Meeting held May 21, 2008, this letter provides direction to ABF and their fabricator, ZPMC, regarding the dimensional tolerances required for the fabrication of the orthotropic box girder. Specifically, this is in regard to the tolerances for alignment of rib stiffeners of orthotropic plates between segments of the box girder. Special Provision Section 10-1.59, "Steel Structures," subsection, "Shop Welding, Design Details Item G – Dimensional Tolerance,," outlines the dimensional tolerances for the various components of the OBG including, depth, skin plate alignment, and rib placement, offset, and sweep.

The tolerances for rib stiffeners of orthotropic panels are as follows:

- within 4mm theoretical at floor beams (reference G3e)
- within 4mm of corresponding rib at matching panel ends (reference G3e)
- bolted spliced ribs - within 2mm of corresponding rib at matching panel ends after shimming (reference G3e)
- weld spliced ribs - align per D1.5, offset  $\leq 10\%$  thickness (reference G3d)
  - 10mm web  $\leq 1\text{mm}$
  - 16mm flange  $\leq 1.6\text{mm}$
  - 14-28 plate  $\leq$  varies 1.4 – 2.8
- Rib sweep shall not exceed 1:480 between floor beams or bulkheads (reference G3f). The term "sweep" defines the allowable curve or slope of a lateral displacement of a rib over a given length. It does not allow for sudden bends or kinks in the ribs to correct for fabrication errors. The ribs may not be deflected laterally greater than 1:480 over any length of the rib. Also expressed as;
- maximum deviation from straightness -  $L/480$  (per G3 reference to AASHTO Construction Specs Section 11.4.13)

If any of the tolerances above are not achieved, the segments are subject to rejection. Repairs may be proposed, but require the Engineer's approval. This includes proposals such as removing welds in order to reposition the ribs and/or displacing the ribs laterally, resulting in a deflection greater than the specified maximum 1:480.

Accordingly, statements in The Contractor's working drawings that the misaligned ribs would be corrected by bending to a slope up to 12:300, as permitted in AWS D1.5, have been stricken or annotated by redline comments. The 12:300 allowance in the Bridge Welding Code does not invalidate or take precedence over the requirements of the Special Provisions. Some of these redlined working drawings have been approved as noted. In these cases, the note is part of the approval and the fabricator must comply with the notes or submit an alternate for approval.

If you have any additional questions, please contact Brian Boal at (510) 714-7074.

Sincerely,



GARY PURSELL  
Resident Engineer

cc: Rick Morrow  
Brian Boal  
Mark Woods  
Gary Lai  
file: 05.03.01